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# Spaceport News

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John F. Kennedy Space Center

### NASA's 2005 budget request reflects President's goals

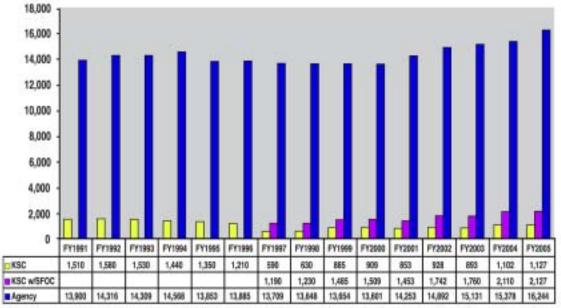
ASA unveiled its budget request to Congress Feb. 3 with the release of two companion documents: the "Fiscal Year 2005 Budget Estimates" and "The Vision for Space Exploration," a framework for exploration of the solar system and beyond.

The budget request, also called the "Integrated Budget and Performance Document (IBPD)," was a key basis for NASA's highest possible "grade" in the government-wide Budget and Performance Integration initiative, part of the President's Management Agenda to improve key areas of federal management.

NASA leads the rest of the federal government in this important area, by being the only agency that has achieved this highest or "green" rating.

The President also recently signed the Omnibus Reconciliation Bill, which included both the NASA budget and federal pay increases. As a result, federal employees will get, on the

NASA-KSC Budget Summary - Fiscal Years 1991-2005 (Dollars in millions)



SFOC - Space Flight Operations Contract budget
\*KSC allotment of FY2005 budget excludes exploration initiatives and pending Agency decisions.

average, a 4.1 percent pay increase retroactive to Jan. 11. Salaries are by geographic location, and NASA-KSC employees will get approximately 3.8 percent.

NASA's 2005 fiscal year

budget request aligns with the goals set forth in "The President's Vision for U.S. Space Exploration" and provides a responsible five-year budget plan for achieving these goals.

The goal of the new explora-

tion vision is to advance U.S. scientific, security and economic interests through a robust space exploration program. In support of this goal, NASA, in cooperation with its partners in other

(See BUDGET, Page 6)

### Spaceport helps fill troops' hearts and tummies on Valentine's Day

Valentine's Day apart from loved ones will sample some sweet treats with the help of employees in the Chief Financial Office.

The idea to start "Operation Cookies" began with a cookie

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**Page 8** - National Engineerís Week is February 22-28

swap between 14 KSC employees last Christmas, which was organized by Cheryl Ford.

Joye Williamson of the IT Business Office decided to send the cookies she received to her nephew stationed in Iraq.

At the beginning of the New Year, word spread of what Williamson had done. The troops were grateful for the cookies Joye sent to them via her nephew, Capt. Corey Price of the 54th Medical Company, Unit 1293.

Ford wanted to do something for the troops for Valentine's Day and a total of 23 employees from four directorates took part, donating home baked cookies and money for postage to send them to Iraq.



THIS GROUP SENT more than 480 cookies to U.S. troops serving in Iraq.

The group brought their baked goods to KSC Headquarters for assembly on Feb. 2 and more than 480 cookies were mailed to the troops the next day. Other small items the troops miss from home

were sent with the cookies, which should reach their destination before Valentine's Day.

(See COOKIES, Page 8)



# The Kennedy Update

Jim Kennedy Center Director

reetings, everyone!
Tomorrow is a wonderful day for all those who have a special someone in their lives.

Of course, I'm referring to Valentine's Day and I hope you take the time to show that person how much they mean to you. Our work is important, but nothing is more important than our family and friends.

Speaking of special people, I'd like to publicly recognize the efforts of Cheryl Ford and Joye Williamson, who helped make Valentine's Day a little "sweeter" for our troops in Iraq. Joye had been sending goodies to her nephew in Iraq since he was sent there.

When Cheryl heard of this, she came up with a fantastic idea. Within the Chief Financial Office over the holidays, people swapped cookie recipes. She then put out the call and 23

employees across four directorates began "Operation Cookies."

On Feb. 3, they sent 480 cookies, along with some other items the troops needed, to Iraq in time for Valentine's Day. The people who participated are listed in a story detailing the total effort (see page 1), but I wanted to add my recognition and vote of thanks.

I've met many people with the 45<sup>th</sup> Space Wing and former military people here at NASA. I know from speaking with them that efforts like this are appreciated and mean as much to the troops as any visit by a Hollywood movie star.

To Cheryl, Joye and the entire "Operation Cookies" team, thank you for caring enough to give your time and effort to support the men and women who are defending the freedom we enjoy here each and every day!

Earlier this week, I was

honored to attend an event recognizing the hard work and efforts of the people directly helping NASA return the Space Shuttle fleet safely to flight. I attended the United Space Alliance Superior Achievement Recognition Awards banquet on Wednesday and was honored and privileged to be part of such a wonderful and distinguished event.

I enjoyed meeting so many people who are totally dedicated and committed to returning our Space Shuttles safely to flight. The pride and enthusiasm for the work you do radiated from every person.

To list individual winners

and have spoken to numerous people within USA, but I've never had the opportunity to roll up my sleeves and do some of your work myself.

I know it'll be a challenging and enjoyable afternoon and most of all, a great education for me. See you then.

Finally, I know it's been a couple of weeks, but I wanted to thank everyone who participated in the STS-107 crew memorial Feb. 1 at the National Space Mirror Memorial. While the weather was a little rough, it was still a beautiful and touching morning.

I know the families of the crew appreciate the fact you took

# Efforts like this are appreciated and mean as much to the troops as any visit by a Hollywood movie star.

here isn't possible, but I wanted to pass on my congratulations again to all those receiving awards that night. Truthfully, everyone at USA is a winner in my book and I'm honored to work with you each and every day.

Along with the awards dinner, I'm very excited that I'll be joining the USA team to work with them for an afternoon in March, I've taken several tours

the time to remember their loved ones and the contributions they made to space exploration.

My appreciation also goes to everyone for their participation on NASA Remembrance Day Jan. 29, as we remembered all those at NASA who made the ultimate sacrifice in the quest of human space exploration.

Have a great weekend, and happy Presidents' Day.

### Celebrate African-American achievements in February

he KSC Black Employee Strategy Team (BEST) is hosting this year's African-American History Month events, themed "Brown vs. Board of Education: 50th Anniversary."

The BEST team's kick-off event was held Feb. 2 at the Training Auditorium. Winston Scott, astronaut and Executive Director of the Florida Spaceport Authority, and Col. Everett Thomas, vice commander of the 45th Space Wing, also welcomed the crowd and addressed the achievements of African-Americans.

"Some people ask, 'Why should we pause and acknowledge the accomplishments of a specific group?" said Winston. "And the answer is simple.

We've come a long way in 50 years, but we still have a long way to go. We have a long way to go before the contributions of all Americans are fully integrated into the history of American fabric."

The keynote speaker, KSC Deputy Director Dr. Woodrow Whitlow Jr., acknowledged the BEST committee for its contributions before talking about the meaning of African-American History Month.

"This is a time we can think back on the hard times our ancestors endured," said Whitlow. "But it is also a time to celebrate the victories they gave us. We have seen and read about the struggles of our forefathers, our parents, our grandparents





KSC DEPUTY DIRECTOR WOODROW WHITLOW JR. was the keynote speaker at the kickoff to Februaryís African-American History Month in the Training Auditorium.

and in some cases, even ourselves."

After an invocation by Bruce Lockley of Shuttle Processing and a stirring rendition of the National Anthem by Ivette Rivera of Spaceport Service, KSC Associate Director Jim

(See CELEBRATE, Page 6)

#### Workforce gives heartfelt Safety and Mission Success comments

By Linda Herridge Staff Writer

ennedy Space Center employees recently submitted nearly 3,500 comments on how the Columbia Accident Investigation Board (CAIB) report affected daily operations at KSC.

Workers offered suggestions regarding ways NASA and KSC can improve. Now, NASA officials plan to show they've been listening.

Comments included recommendations that the Agency "establish an environment where open and honest communication is encouraged and rewarded," and "stay away from the 'business as usual' mentality."

KSC Center Director Jim Kennedy praised employees for sharing their views. The feedback was part of NASA's Agency-wide Safety and Mission Success (SMS) week, Nov. 17-21.

"At the completion of SMS week, it was clear...the workforce put their heart and soul into identifying changes necessary for us to renew our commitment to excellence and achieve the desired Safety and Mission Success in all we do," said Kennedy.



ANALYSIS TEAM MEMBER Dr. Phillip Meade was recently appointed Safety and Mission Success Change Manager for KSC.

KSC's SMS Week Data Analysis Team sorted and prioritized the suggestions into categories including communications, engineering/technical, leadership, learning, process improvement, resources and safety. The team submitted the report to Kennedy and the Agency-wide Diaz Team.

The next step is putting the best employee ideas into action. Analysis Team member, Dr. Phillip Meade, who was recently appointed SMS Change Manager for KSC, said he is up for the

challenge. Transferring for a year from his duties as the International Space Station and Payload Processing Directorate's Process Improvement Manager, Meade reports directly to Kennedy.

Meade will utilize guidance from several KSC and Agencywide implementation teams and seek help from the Change Leaders Network, made up of members from all KSC directorates

He also will rely on Teamwork and Reliance survey

results, the CAIB report and the One NASA Implementation Plan.

Goddard Space Flight Center Director Al Diaz has developed a way to apply findings from the CAIB report to other areas across the Agency.

Meade, who served on the Center's SMS Steering Committee, said: "The center director's desire is that the dialogue started during SMS Week will continue. To that end, we'll be soliciting feedback on a regular basis, and will be using that to help guide our efforts."

Kennedy explained, "Phil is the right man at the right time to lead our efforts to implement the SMS changes necessary to achieve excellence, and I look forward to everyone at KSC supporting his efforts."

Meade added, "I can't wait to get started. This is an exciting time to be working for NASA as we prepare for Return To Flight and strive to implement the President's new space vision. The environment is ready for change."

The SMS Week Web site continues to accept suggestions at www.ksc.nasa.gov/sms, and a special email address, "SMS Feedback," is in the global address listing. Meade can be reached at 867-6627.

## KSC Return to Flight reorganization underway

By Jennifer Wolfinger Staff Writer

ccasionally, we all need to do some spring cleaning. It's not that things didn't work before, but a little change could make a world of difference. Kennedy Space Center is doing just that with its Return to Flight (RTF) Reorganization

The reorganization follows the Columbia Accident Investigation Board's recommendations regarding the independence of our safety and mission assurance (S&MA) functions. It also establishes an Independent Technical Authority (ITA). Directors of the new organizations will report directly to

Center Director Jim Kennedy.

Bert Garrido is leading the efforts to form a consolidated, centralized S&MA organization, which will provide support to the new KSC ITA.

Another new organization will perform functions of the Chief Engineer and System Management Office and will manage ITA. This office will be led by Oscar Toledo and will perform the Center's business systems management function, which currently resides within the Safety, Health and Independent Assessment Directorate.

Additionally, the Spaceport Engineering and Technology Directorate will realign internally to provide the ITA with engineering technical support. Organizational changes include renaming the Workforce and Diversity Management (WDM) Office to be referred to as the Human Resources Office, and realigning some External Relations and Business Develop-

#### kscrtfreorg@kscems.ksc.nasa.gov

Kennedy intends to impact 200-250 employees through this process and complete the transition by March 31.

"I am counting on your support of these activities,

# If you have comments for KSC's Return to Flight personnel reorganization, e-mail them to: kscrtfreorg@kscems.ksc.nasa.gov

ment Directorate functions.

WDM Director Rick Arbuthnot and Acting Deputy Director Jenny Lyons are leading the overall effort and are delegating to five Organizational Implementation Teams and four Cross-Cutting Teams. Workers can participate by e-mailing considering the ambitious timeline to ensure a smooth transition," said Kennedy in a message to the workforce. "Be assured that this is another important step as we continue on the path to return to flight, and I am certain that we can succeed in making it happen!"

# Columbia and her crew soar in m

he Space Mirror Memorial at the Visitor Complex reflected an overcast morning Feb. 1, during a public ceremony honoring fallen astronauts on the first anniversary of the Space Shuttle Columbia tragedy.

But the fondness many feel for the Shuttle and its crew shined through. Astronaut and Florida Space Authority Executive Director, Winston Scott was among those who shared memories with hundreds of people at the event.

"I had the pleasure, and I do mean it was a pleasure, of flying aboard the Space Shuttle Columbia," he said. "Columbia was a good ship, it really was. But occasionally, good ships can run aground. It depends on the winds, the weather, the hands of fate, and that's exactly what happened to Columbia one year ago. But in spite of that, Columbia was a very good ship."

The crowd fell silent for a moment at 9:16 a.m., the target arrival of Columbia at the Shuttle Landing Facility last year. KSC Director Jim Kennedy then thanked the audience for the past year of devotion and commitment to the NASA family.

"We do not do this job alone," said Kennedy. "We do it with the collective wisdom of this nation, indeed, this world."

He drew an analogy between human emotions and the twin rovers exploring Mars. "I'd like to center my thoughts around opportunity and spirit. Knowing what happened one week ago, and four weeks ago, I suspect most of you think I'm referring to the twin rovers on our sister planet beaming back science and beautiful, inspirational pictures from the planet Mars.

"But, indeed, while we are proud of that accomplishment, I am talking about the opportunity that we as a nation have to go forward in the wake of the tragedy of a year ago," said Kennedy. In spite of the loss, he recognized "the human spirit that has been displayed so beautifully for the last year."

The director then gave several examples of the "beauty of our collective human spirit," including the work of the Columbia recovery, reconstruction and preservation crew.

Dr. Woodrow Whitlow, KSC deputy director, then helped Kennedy place a wreath at the base of the Space Mirror. The Visitor Complex also handed out flowers for guests to lay at the memorial throughout the day.

Dr. Stephen Feldman, president of The Astronauts Memorial Foundation, presided over the event.

Students and staff from Shoshone-Bannock High School, located on an Indian reservation in Fort Hall, Idaho, conducted a traditional honoring ceremony to recognize the astronauts and family of STS-107. The students designed an experiment that was flown on the



FOLLOWING THE MEMORIAL SERVICE for the crew of Columbia at the Space Mirror Memorial, visitors place roses in the wire mesh fence surrounding the mirror.



orbiter, and elders of the tribe felt the ceremony should honor the crew along with the students.

According to Shoshone-Bannock science teacher Ed Galino, this is a ceremony done by some Native-American tribes when a person or persons has changed their life in a positive way and then has passed on.

"The beat of the drum that we will perform on February 1, 2004, is really the beat of our own hearts," said Shoshone-Bannock science teacher Ed Galino. "Life's lessons of NASA continue in the heartbeat of all of us. We will continue to dream and explore."



A MEMBER OF THE Shoshoni-Bannock Native-American community from Fort Hall, Idaho, reads a tribute to the crew of Columbia while another displays a handmade item with the STS-107 logo.

logo h in the t The de stored

# nemories, inspire dreams





FOOT BY 15-FOOT REPLICA of the STS-107 as been installed above the A on the A tower transfer aisle of the Vehicle Assembly Building. Ebris from the orbiter Columbia is permanently in the tower.



POSING WITH A PLAQUE dedicated to Columbia Jan. 29 are (left to right) United Space Alliance Project Leader for Columbia Reconstruction Jim Comer, Shuttle Launch Director Mike Leinbach, astronauts Douglas Hurley and Pam Melroy, Center Director Jim Kennedy and NASA Vehicle Manager Scott Thurston.

#### VAB 16th floor A tower is Columbia's Arlington

ASA Administrator Sean O'Keefe has designated the last Thursday in January as an annual NASA Remembrance Day. This is a day for the NASA family to take time to remember those who died in the pursuit of space exploration.

This year, the special day was held Jan. 29, and one minute of silence was observed to remember those dedicated people.

In the Vehicle Assembly Building that day, Shuttle Launch Director Mike Leinbach, Center Director Jim Kennedy and NASA Vehicle Manager Scott Thurston unveiled a plaque honoring "Columbia, the crew of STS-107, and their loved ones."

The dedication of the plaque was made in front of the 40-member preservation team.

"We all have significant events in our lives when we remember where we were, who we were with and exactly what we were doing when those events transpired, and Columbia certainly was one of those," said Leinbach.

"We also have experiences we remember, those longer term events in our lives. The recovery of Columbia was one of those, the reconstruction team was one and the preservation team was certainly one of those."

Leinbach thanked the group for their hard work and for the respect they showed in handling the material.

"We knew we had to learn from this accident and not bury it like we did Challenger," he said. "Hopefully, we'll be able to design better spacecraft and flight crew systems for the future, which is the whole concept behind this room."

Kennedy also thanked the group for their efforts. "Please know that it will have a lasting impact on all of us and our ancestors, as we realize that what you did has made a difference,"

he said.

Astronaut Pam Melroy, who helped organize the collection efforts for the crew's personal belongings, compared Columbia's resting place on the 16th floor of the VAB to Arlington National Cemetery in Virginia, where many of the nation's heroes are buried.

"As I was thinking about it, I realized that this facility is Columbia's Arlington," said Melroy. "We have a very special place to come and reflect and to be inspired.

"If you've ever been to Arlington, it's a very inspiring place to see all the people that have sacrificed everything for the sake of our country," she said.

"And it's the same thing here for the thousands of lives that have built Columbia, maintained her, launched her and flew her. That is our dedication here."

### Spirit breaks new ground, Opportunity takes first drive

The twin Mars geologists Spirit and Opportunity, launched by KSC's Launch Services Program, continue their successful venture across the planet's surface.

NASA's Spirit has returned to full health and resumed groundbreaking tasks never attempted on Mars before.

"Our patient is healed, and we're very excited about that," said Jennifer Trosper of NASA's Jet Propulsion Laboratory, mission manager for Spirit.

Spirit temporarily stopped communicating Jan. 22 and was later diagnosed with a memory-management issue. Engineers regained partial control of the spacecraft within days and reformatted Spirit's flash memory to prevent recurrence of the problem.

Spirit's first day of science operations after the memory reformatting featured the first brushing of a rock on Mars to remove dust and allow inspection of the rock's surface. Steel



SPIRIT WAS INSTRUCTED Feb. 6 to grind the surface of this large rock, unofficially named Adirondack, before examining its interior.

bristles on the rover's rock abrasion tool cleaned a circular patch on the rock unofficially named Adirondack.

The tool's main function is to

grind off the weathered surface of rocks with diamond teeth, but the brush for removing the grinder's cuttings can also be used to sweep dust off the intact surface.

One reason scientists first selected Adirondack for close inspection is because the rock appeared relatively dust-free compared to others nearby. Spirit was instructed Feb. 6 to grind the surface of Adirondack with the rock abrasion tool.

After the grinding, the turret of tools at the end of the rover's robotic arm will be rotated to inspect the freshly exposed interior of the rock.

Meanwhile, halfway around Mars, NASA's Opportunity rolled along early Feb. 6 for the second day in a row. It arrived within about half a meter of the northeastern end of a rock outcrop scientists are eager for the rover to examine.

The main task for both rovers is to explore the areas around their landing sites for evidence in rocks and soils that could show whether those areas ever had environments that were watery and suitable for sustaining life.

#### **BUDGET** ...

(Continued from Page 1)

Federal agencies, the private sector and the international community, will:

- Implement a sustained and affordable human and robotic program to explore the solar system and beyond;
- Extend human presence across the solar system, starting with a human return to the Moon by the year 2020, in preparation for human exploration of Mars and other destinations;
- Develop the innovative technologies and infrastructures both to explore and to support decisions about destinations for human exploration.

In pursuit of the exploration vision, NASA has identified six guiding principles:

**Pursue Compelling Questions -** Exploration of the solar system and beyond will be guided by compelling questions of scientific and societal importance.

Across Multiple Worlds - NASA will make progress across

a broad front of destinations, starting with a return to the Moon to enable future human exploration of Mars and other worlds.

Employ Human and Robotic Capabilities - NASA will send human and robotic explorers as partners, leveraging the capabilities of each where most useful.

Sustainable Exploration - NASA will pursue breakthrough technologies, investigate lunar and other space resources and align ongoing programs to develop sustainable solar system exploration strategies.

Use the Moon as a Testing Ground for Mars and Beyond -The first robotic missions will be sent to the Moon as early as 2008 and the first human missions as early as 2015.

Starting Now - Consistent with the 2005 budget, NASA will immediately begin to realign programs and organization, demonstrate new technical capabilities and undertake new robotic precursor missions to the Moon and Mars before the end of the decade.

# Plan now for the 2004 KSC All American Picnic

Don't miss the fun at the KSC Annual All American Picnic on **Saturday, March 27** at KARS Park I from 10 a.m. to 4 p.m. This year's festivities will include children's carnival games, community demonstrations, the much loved chili cook-off, bands, rock wall climbing, family sports, car show, dunking booth and much more. Watch the *KSC Daily News* and *Spaceport News* for details about volunteer needs and ticket sale locations. For information, e-mail Claudette.M.Beggs@nasa.gov.

#### **CELEBRATE** ...

(Continued from Page 2)

Hattaway explained how Black History Month has evolved.

"February was selected because it included the birthdays of Frederick Douglas and Abraham Lincoln," said Hattaway. "In 1976, the entire month was designated to recognize the accomplishments of African-Americans in history that were vital to the success of this country."

Other events planned for African-American History Month include BEST Fridays. Each Friday in February, employees are encouraged to wear KSC and BEST logo shirts for casual dress and the Lackmann Cafeterias will feature special menus.

Also plan to attend a luncheon on Feb. 20 at the Visitor Complex's Debus Center, featuring keynote speaker Dr. Dorothy Hayden-Watkins, NASA's assistant administrator for Equal Opportunity Programs.

For tickets, contact Wanda Petty (867-9165, HQ/2321), Eunice Warren (867-9240, O&C/ 1238B), Carol Davis (867-5942, SSPF/3220D), Willie Moore (861-4862, OSB/4309F3), or Tamiko Fletcher (476-4049, Hangar I/223).

## Garrido a safe choice to lead Ombuds Program

By Linda Herridge Staff Writer

ASA Administrator Sean O'Keefe, has established the Agency's Ombudsman Program and Humberto 'Bert' Garrido will serve as KSC's Ombudsman.

An ombudsman from each NASA Center will serve to ensure the Agency becomes more accountable and results-oriented by allowing its employees every opportunity to address safety issues.

The program was set up in response to recommendations in a report by Goddard Space Flight Center Director Al Diaz, which applied the findings of the Columbia Accident Investigation Board to other NASA operations. The report, titled "A Renewed Commitment to Excellence," was released to the Agency in late

January.

Garrido is KSC's associate director for Safety and Mission Assurance.

"Bert Garrido has been the Safety Ombudsman at KSC for years and is the ideal person to serve as the overall Ombuds for the future," said KSC Director Jim Kennedy.

Garrido's responsibilities will include conducting informal inquiries and seeking to promote a mutually satisfactory resolution to a concern. He will also have the ability to raise issues directly with Center Directors and the Deputy Administrator at NASA Headquarters.

"My first priority will be to ensure that all safety issues brought to me will be thoroughly investigated," said Garrido. "I also encourage workers to use their organization's chain of command first."



HUMBERTO "BERT" GARRIDO will serve as KSC's Ombudsman to ensure the Agency allows its employees every opportunity to address safety issues.

Garrido will confidentially listen to and act upon NASA and contractor workers' concerns related to safety, organizational performance and mission success.

"The Ombuds are designed to serve as a safety valve when employees feel regular channels for raising issues and concerns are not working effectively," said O'Keefe.

Kennedy added, "Bert has a genuine interest in hearing all concerns and will work diligently to assure that the voice of the workforce is heard, as we attempt to strengthen a culture that encourages an open and honest dialogue between management and all employees."

## This Kee can get into every KSC building



WAYNE KEE has been KSC's incident commander for the past 13 years.

By Jennifer Wolfinger Staff Writer

Preparedness Officer
Wayne Kee to Kennedy Space
Center. His support of safety at
the Center earned him recognition as a 2003 Employee of the
Year.

"Growing up, I always wanted to be a firefighter or join the military," said Kee, who married his childhood sweetheart, Lynda, and has three adult children and four grandchildren. "I had the privilege of doing both."

After 24 years as a U.S. Air Force fire chief, he pursued a civilian fire department position.

"My hopes and dreams were quickly extinguished when the Gulf War broke out," said the Spaceport Services employee.
"The job quickly converted to a military position for wartime. Never did I ever imagine that I

would be working for NASA, the greatest job in the world."

For 13 years, he's been incident commander for five hurricane ride-outs at the Center, closing it for the first time in September 1999. Possessing the key to every building, he discovered interesting places to eat and sleep during a 36-hour shut-in.

Kee's exceptional tasks prompted his recognition.

He enhanced KSC's Emergency Preparedness Program, contributed to the VPP STAR initiative and supported the Center's role as Emergency Preparedness lead. He also participated in the Columbia recovery efforts.

"I'm somewhat humbled that my fellow employees recognized my small contribution to the team effort," said Kee.

Protecting colleagues isn't his only mission. He also provides guidance after work.

"As a Sunday school teacher and deacon at my church, I enjoy the ministries of the church, such as hospital visitation and a very unique group called Prayer on Wheels that my wife and I support," he said.

## KSC workshop assists teachers

By Jennifer Wolfinger Staff Writer

Prassica may sound like a prehistoric period, but it's actually a type of plant and butterfly that interact with one another. To encourage future understanding of the creatures' functions and evolution, KSC hosted the "Brassica and Butterfly" workshop Jan. 30-31.

Twenty-five investigative teachers from across the U.S. visited Titusville's Enchanted Forest to test classroom projects for their fifth to 12th grade students. KSC's Fundamental Space Biology Outreach Program sponsored the sessions, which also transforms participants into NASA ambassadors in the hope they'll enlighten colleagues about NASA's research.

"The workshop demonstrates to teachers the value of doing research in space," said Tom Dreschel, program manager of Fundamental Space Biology Outreach.

## National Engineering Week is February 22-28

#### Engineers at our Spaceport ensure a promising future

In just over eight minutes, the Space Shuttle roars to life from the launch pad to reach speeds of more than 17,000 mph. Martin Hayes, a 25-year-old engineer at KSC, knows the process well. The Shuttle couldn't leave Earth without the ultra-cool hydrogen fuel that his team loads into the Shuttle's huge external tank six hours before every launch.

The Shuttle's three main engines burn a mixture of liquid hydrogen and oxygen at a rate of approximately 1,000 gallons every second. Hayes and the "hydrogen team" at KSC maintain the fuel stored in a 900,000-gallon, thermos-like container that keeps the hydrogen in liquid form by cooling it to minus 425° Fahrenheit.

Hayes and every engineer at the Spaceport is being recognized for helping to revolutionize the way we work during National Engineers Week, Feb. 22-28. This nationally recognized event highlights the contributions of America's engineers to our technological progress, infrastructure and prosperity.



MARTIN HAYES and every engineer at the Spaceport is being recognized for helping to revolutionize the way we work during National Engineers Week, Feb. 22-28. This event highlights the contributions of all engineers.

By promoting a standard of professional excellence, engineers at the Spaceport help ensure a promising future for the world.

On launch day, Hayes and the team ensure the liquid hydrogen flows smoothly through an intricate series of above-ground pipes to the Shuttle's external tank. The work isn't for the timid or those afraid of heights, as many of the valves and pipes that transport the hydrogen reach as high as 215 feet.

"One of the perks of the job is the view from the launch tower," said Hayes. "From there, you can see all the NASA and Air Force launch pads and, beyond them, the vast ocean that carried explorers to America. Seeing this panoramic view of the Kennedy Spaceport makes it clear, this is the gateway to the universe for a new generation of explorers."

Hayes began his NASA career in 1998 as a cooperative education student while attending Tuskegee University. He earned a bachelor's degree in aerospace engineering in 2000 and came to work for NASA full time.

In recognition of National Engineer's Week, The Boeing Co. is sponsoring an Engineering Showcase in the O&C Mission Briefing Room on Feb. 25 from 10 a.m. to 2 p.m.

Each of Boeing's programs is featuring engineering products and systems used by the company and its customers. In addition, representatives from Central Florida universities and Invention Disclosure are offering valuable information for the engineering community.

All KSC/CCAFS personnel are encouraged to attend. Exhibitors featured in this year's showcases include: Checkout Assembly and Payload Processing Services; Delta II/III; Delta IV; Embry Riddle University; Florida A&M University; Florida Space Shuttle Operations; International Space Station; Invention Disclosure; Rocketdyne; Space Lift Range Services; Spacehab; University of Central Florida; and University of Florida.

For more information about this year's Engineering Showcase, please contact David Headley at 861-

#### COOKIES ...

(Continued from Page 1)

Other KSC employees who gave their time and talent for the troops include John Zuber, Delores Abraham, Loraine Alton, Aimee Bergquist, Brian Burns, Carol Cavanaugh, Kristin Cobb, Lydia del Rio, Elisa Lopez, Linda Mullen, Penny Myers, Kim Myrick, Mary Repass-Friend, Ann Robertson, Sandy Walsh, Randy Wasserman, Michun Williams, Cynthia Kelley, Liz Osborne, Inna Hinson and Dian Farmer.

#### Kennedy ushers in aerospace technicians



CENTER DIRECTOR JIM KENNEDY was a special guest at the Fall Brevard Community College graduation ceremony in Melbourne, where a group of 12 graduates of BCC's Aerospace Technology program were greeted by Kennedy as they walked across the stage. Aerospace Technology is a two-year degree program conducted at KSC. For information, call 449-5060 or visit http://www.brevardcc.edu/spaceport



John F. Kennedy Space Center

## Spaceport News

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